C 89/4

Bureau of Land Management

Cubic Conversion

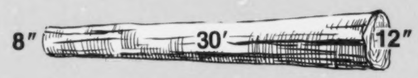
What Makes A Good Measurement System

I 53.2:

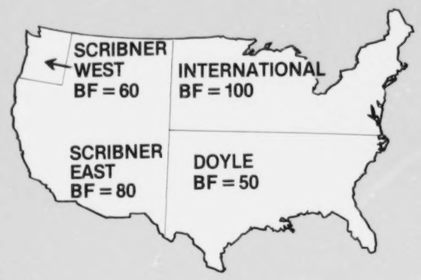
B

Problems With Board Foot Measurements

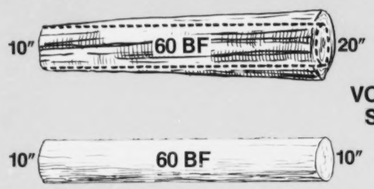
Inconsistent



BF VOL = ? (see map)



Inaccurate



Board foot volume does not consider all of the taper in a log.

C

Cubic Volume Is:

A MEASURE OF FIBER

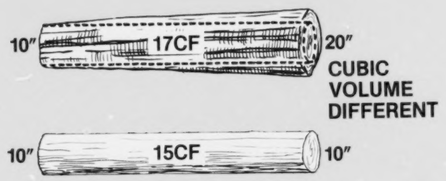
$30 \times (8^2 + 12^2) \times *K = 17$ CF

***K = .002727**

Advantages Of Cubic:

More Consistent

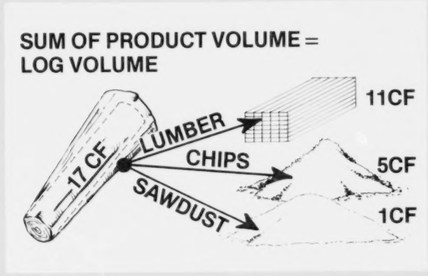
Accurate



Cubic volume varies by the amount of taper in a log.

Product Specific

Complete Accountability



D

Consistent Conversions

2 CORDS = 1000BF

550BF = 100CF

BF = K x CF

ASQ

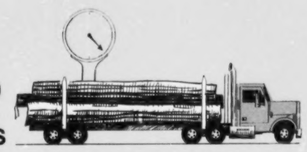
1.54 CORDS = 100CF

RMP

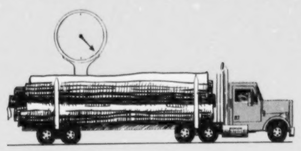
770BF = 100CF

400BF = 100CF

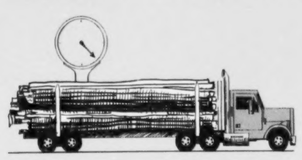
Weight To Scale Ratios



BF 6000
CF 880
35″ LOGS



BF 3300
CF 880
7″ LOGS

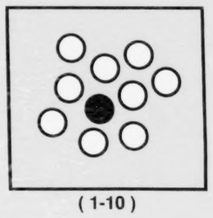


BF 4000
CF 880
6″ LOGS

Cubic scale will reduce the variation in scaled load volume. This will make it possible to lower scaling costs by decreasing the number of scaled loads needed to meet statistical accuracy.

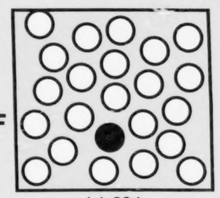
Sample Scaling

BOARD FOOT
SAMPLE RATE
COEFFICIENT OF
VARIATION = 8.5



(1-10)

CUBIC FOOT
SAMPLE RATE
COEFFICIENT OF
VARIATION = 4.6



(1-60)

Background

The current measurement system, Scribner, that is used for buying and selling timber has been in existence for over 125 years. It is outdated and predicts only the amount of lumber that will be produced from a given log. The smaller the log, the greater error in the volume estimate.

In search of a measurement system that would make accurate estimates of all the volume in logs, the BLM joined with industry and the Forest Service on the national level to develop the National Cubic Scaling Rule that was accepted by the federal agencies and industry in 1989.

Measurements in cubic offer an accurate, consistent measurement that accounts for lumber, the chips, and the sawdust that is produced from logs of all sizes.

Current Situation

- Cubic Scaling Rules Accepted By National Forest Products Association, Federal Agencies 1989
- Conversion To Cubic Tied To Implementation Of BLM's New Resource Management Plans
- Implementation Schedule:

Western Oregon
Dual Tracking System—Spring 1992
Cubic Sales—Fall 1992

Eastern Oregon/Washington
Concurrent With Forest Service Region 6 Users

Sources Of Information

- Cubic Scaling Handbook (1990)
- User's Guide For Cubic Measurement
- Conversion Factors Handbook
- PNW Product Recovery Reports

Advantages Of Implementation

Measuring Volumes In Cubic Feet Means -

- Simple Metric Conversion
- Improved Fiber Accountability
- Better Process Control
- National Uniformity

Summary

Using cubic volume for estimating or predicting forest products from log volumes has several advantages over using board feet. If the lumber recovery estimates are used, there is a substantial gain in accuracy of estimates for both primary products and by-products; in addition, the volume of products equals the volume of the log. Using cubic feet and wood density allows the evaluation of complex alternatives for products on a rational basis. Finally, changing scaling systems presents an opportunity to have a national measurement system used by industry and all federal agencies.

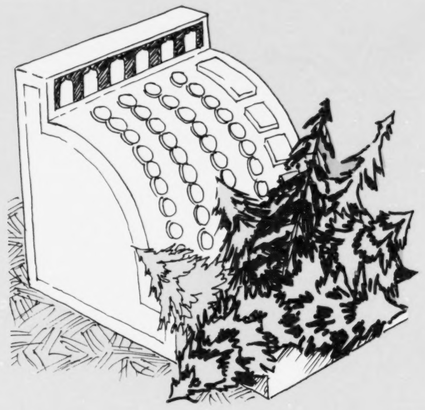
A

What Makes A Good Measurement System

Accurate Volume
For All Size Trees

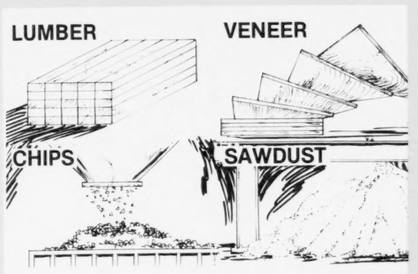
That is

Exact Enough To
Buy And Sell Timber



and

Can Predict Products



CF = Cubic Foot	ASQ = Allowable Sale Quantity
BF = Board Foot	RMP = Resource Management Plan

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